

Abdullah Al-Shabili

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EDUCATION

PhD in Electrical Engineering

New York University, NY, USA

Thesis title: Linear Inverse Problems: From Sparsity to Deep Learning.,

Advisor: Prof. Ivan Selesnick

Aug. 2017 - Present

Expected May 2022

M.Sc. in Electrical and Computer Engineering

Khalifa University, Abu Dhabi, UAE

Aug. 2015 - May 2017

B.Sc. in Electrical and Electronic Engineering

Khalifa University, Abu Dhabi, UAE

Aug. 2010 - May 2015

PROFESSIONAL EXPERIENCE

Research Assistant

New York University, NY, USA

Tandon School of Engineering, Advisor: Ivan Selesnick

Aug. 2017 - Present

Research Intern

Facebook, CA, USA

Facebook Reality Labs (FRL), Advisor: Sapna Shroff, Jun Hu.

Sep. 2020 - Dec. 2020

Research Intern

Mitsubishi Electric Research Laboratories (MERL), MA, USA

Computational Sensing Group, Advisor: Hassan Mansour, Petros Boufounos.

May 2019 - Aug. 2019

SELECTED PUBLICATIONS

Journals

- (1) **A. H. Al-Shabili**, I. W. Selesnick, “Positive sparse signal denoising: What does a CNN learn?”, *IEEE Signal Processing Letters* (**Accepted**).
- (2) **A. Al-Shabili**, Y. Feng, and I. W. Selesnick. “Sharpening Sparse Regularizers via Smoothing.” in *IEEE Open Journal of Signal Processing*, 2021.
- (3) **A. Al-Shabili**, L. Weruaga and S. Jimaa, “Optimal Sparsity Tradeoff in ℓ_0 -NLMS Algorithm,” in *IEEE Signal Processing Letters*, vol. 23, no. 8, pp. 1121–1125, Aug. 2016.
- (4) N. Ali, R. Almahainy, **A. Al-Shabili**, N. Almoosa and R. Abd-Alhameed, “Analysis of improved μ -law companding technique for OFDM systems,” in *IEEE Transactions on Consumer Electronics*, vol. 63, no. 2, pp. 126–134, May 2017.

Conference Proceedings

- (1) **A. H. Al-Shabili**, X. Xu, I. Selesnick, and U.S. Kamilov (2022). “Bregman Plug-and-Play Priors”. *arXiv preprint arXiv:2202.02388*.
- (2) **A. H. Al-Shabili**, H. Mansour, P. T. Boufounos, “Learning Plug-and-Play Proximal Quasi-Newton Denoisers,” *2020 Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, Barcelona, Spain, 2020, pp. 8896–8900.
- (3) **A. Al-Shabili**, I. Selesnick, “Sharpening Sparse Regularizers,” *2019 Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, Brighton, United Kingdom, 2019, pp. 4908–4912.
- (4) **A. Al-Shabili**, L. Weruaga, S. Jimaa, “Minimum Mean Square Deviation in ZA-NLMS Algorithm,” *2017 Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, New Orleans, LA, USA, 2017, pp. 3869–3873.

- (5) **A. Al-Shabili**, L. Weruaga, S. Jimaa, “Adaptive Sparsity Tradeoff for ℓ_1 -Constraint NLMS Algorithm,” *2016 Proc. IEEE Int. Conf. Acoust. Speech Signal Process. (ICASSP)*, Shanghai, 2016, pp. 4707–4711.
- (6) **A. Al-Shabili**, L. Weruaga, S. Jimaa, “Modal Analysis of the ℓ_0 -LMS and ℓ_0 -NLMS Sparse Adaptive Algorithms,” *2016 IEEE 59th International Midwest Symposium on Circuits and Systems (MWSCAS)*, Abu Dhabi, 2016, pp. 1–4.

PATENTS

- (1) Mansour, Hassan, Petros Boufounos, and **Abdullah Al-Shabili**. “*Image Reconstruction using Artificial Intelligence (Ai) Modules Agnostic to Image Acquisition Settings.*” U.S. Patent Application 16/776,538, filed August 5, 2021.

TEACHING EXPERIENCE

Teaching Assistant

New York University, NY, USA

EE3054: Signals, Systems and Transforms, Fall 2018, Spring 2019

Designed and taught lab sessions, and held office hours.

Teaching Assistant

Khalifa University, Abu Dhabi, UAE

Engineering Design, Spring 2017

Signal Processing, Spring 2016, Fall 2017

Microprocessor Systems, Fall 2015, Spring 2016

PROFESSIONAL SERVICES

Journal Reviewer:

IEEE Transactions on Signal Processing (TSP),

IEEE Transactions on Image Processing (TIP),

IEEE Signal Processing Letters (SPL).

Conference Reviewer:

IEEE Signal Processing in Medicine and Biology Symposium (SPMB).

Membership:

Graduate Student member, IEEE and Signal Processing Society.

SKILLS

Selected course work

Convex and Nonsmooth Optim., Advanced ML, Math. Tools for Data Science

Programming

Python (PyTorch), Matlab.

Languages

English (Fluent), Arabic (Native Speaker).